



**west virginia** department of environmental protection

Division of Air Quality  
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Earl Ray Tomblin, Governor  
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**ENGINEERING EVALUATION / FACT SHEET**

**BACKGROUND INFORMATION**

Application No.: R13-2765A  
Plant ID No.: 039-00046  
Applicant: Cranberry Pipeline Corporation (Cranberry)  
Facility Name: Bonham Compressor Station  
Location: Kanawha County  
SIC Code: 4922  
Application Type: Modification  
Received Date: January 18, 2011  
Engineer Assigned: Roy F. Kees, P.E.  
Fee Amount: \$1,000.00  
Date Received: January 19, 2011  
Complete Date: February 1, 2011  
Due Date: June 1, 2011  
Applicant Ad Date: January 18, 2011  
Newspaper: *Charleston Daily Mail*  
UTM's: Easting: 441.64 km      Northing: 4263.22 km      Zone: 17  
Description: Addition of a 40 horsepower Ajax C-42 Compressor Engine. (after the fact)

**DESCRIPTION OF PROCESS**

The following process description was taken from Permit Application R13-2765A:

Natural gas enters the facility via pipeline at a relatively low pressure. Three main compressors located in an engine room compress this gas to a higher pressure. Each of these compressors is driven by natural gas fired engines. A separate compressor located within the facility, but remote from the main compressor engine room, compresses gas from miscellaneous area wells. This gas, sent to the suction piping of the main compressors, supplements the total gas to the facility. This separate compressor is driven by a 40 bhp gas fired AJAX C-42 engine. The products of combustion from burning pipeline quality natural gas by this separate engine are vented through an exhaust stack.

## SITE INSPECTION

A site inspection was not deemed necessary at this time.

Directions as given in the permit application are as follows:

*From I-77, exit 114, go south on Route 21 for approximately 0.5 miles. Turn right onto Derricks Creek Road. Proceed 2 miles to compressor station on the left.*

## ESTIMATE OF EMISSIONS BY REVIEWING ENGINEER

Maximum controlled point source emissions from Cranberry's natural gas compressor station are summarized in the table below.

Emission Point ID	Emission Unit ID	Process Unit	Pollutant	Maximum Controlled Emission Rate	
				Hourly (lb/hr)	Annual (ton/year)
9S	9E	AJAX C-42 Compressor Engine	Nitrogen Oxides	0.39	1.70
			Carbon Monoxide	0.29	1.27
			Particulate Matter-10	0.01	0.06
			Volatile Organic Compounds	0.03	0.15
			Formaldehyde	0.03	0.12

## REGULATORY APPLICABILITY

The following rules apply to the facility:

**45CSR4** (To Prevent and Control the Discharge of Air Pollutants into the Open Air which Causes or Contributes to an Objectionable Odor or Odors)

45CSR4 states that an objectionable odor is an odor that is deemed objectionable when in the opinion of a duly authorized representative of the Air Pollution Control Commission (Division of Air Quality), based upon their investigations and complaints, such odor is objectionable. No odors have been deemed objectionable.

**45CSR13** (Permits for Construction, Modification, Relocation and Operation of Stationary Sources of Air Pollutants, Notification Requirements, Administrative Updates, Temporary Permits, General Permits, and Procedures for Evaluation)

45CSR13 applies to this source due to the fact that they exceed the regulatory emission threshold for criteria pollutants of 6 lb/hr and 10 ton/year.

#### **45CSR22 (Air Quality Management Fee Program)**

As a result of the granting of this permit, the source is subject to 45CSR22. Cranberry will be required to keep their Certificate to Operate current.

#### **TOXICITY OF NON-CRITERIA REGULATED POLLUTANTS**

The following information was obtained from USEPA's Air Toxic Website.

##### **Formaldehyde**

Formaldehyde is used mainly to produce resins used in particleboard products and as an intermediate in the synthesis of other chemicals. Exposure to formaldehyde may occur by breathing contaminated indoor air, tobacco smoke, or ambient urban air. Acute (short-term) and chronic (long-term) inhalation exposure to formaldehyde in humans can result in respiratory symptoms, and eye, nose, and throat irritation. Limited human studies have reported an association between formaldehyde exposure and lung and nasopharyngeal cancer. Animal inhalation studies have reported an increased incidence of nasal squamous cell cancer. EPA considers formaldehyde a probable human carcinogen (Group B1).

#### **AIR QUALITY IMPACT ANALYSIS**

The facility will not be a major source as defined by 45CSR14. Based on the nature of the emissions and the annual emission rate, no air quality impact analysis was performed.

#### **MONITORING OF OPERATIONS**

Cranberry will be required to perform the following monitoring:

1. Monitor and record quantity of natural gas consumed for all engines, combustion sources, and glycol dehydrators.
2. Conduct annual preventative maintenance/inspection, and all routine maintenance service and repairs as required to facilitate proper control device performance, for the control devices listed in the permit.

Cranberry will be required to perform the following recordkeeping:

1. Maintain records of the amount of natural gas consumed in the engines and glycol dehydration unit.

2. Maintain records of testing conducted in accordance with the permit. Said records shall be maintained on-site or in a readily accessible off-site location
3. Maintain the corresponding records specified by the on-going monitoring requirements of and testing requirements of the permit.
4. Maintain records of the visible emission opacity tests conducted per the permit.
5. Maintain a record of all potential to emit (PTE) HAP calculations for the entire facility. These records shall include the natural gas compressor engines and ancillary equipment.
6. The records shall be maintained on site or in a readily available off-site location maintained by Cranberry for a period of five (5) years.

#### CHANGES TO R13-2765

This permitting action supersedes and replaces R13-2765 and involves the following:

1. Addition of a one AJAX C-42 Compressor Engine

#### RECOMMENDATION TO DIRECTOR

The information provided in the permit application indicates Cranberry's natural gas compressor station meets all the requirements of applicable regulations. Therefore, impact on the surrounding area should be minimized and it is recommended that the Kanawha County location should be granted a 45CSR13 modification permit for their facility.

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Roy F. Kees, P.E.  
Engineer

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Date